

Body Weight Overestimation in Adolescents and Its Relationship with Weight Management Behavior



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Abstract

Background: In the United States, 20 million men and women suffer from a clinically significant eating disorder at some time in their life. The National Eating Disorder Association reports that by age six, girls especially start to express concerns about their own weight. Eating disorders are often associated with adolescents' prior risky behaviors such as poor weight management strategies, as well as inaccurate body image. Early identification of this at-risk population is crucial in order for preventive measures to be successful.

Purpose: Therefore, the purpose of this study is to examine distorted body image (body weight overestimation in normal or underweight adolescents) and the relationship that this outlook has with weight management strategies.

Participants: The population sample came from the 2013 Youth Risk Behavior Survey (YRBS) that was established through the Center for Disease Control as part of their Youth Risk Surveillance System. This is an annual, national survey given to high school students focused on identifying risky behaviors and experiences.

Methods: This study is a retrospective cross-sectional design and data files were downloaded through the YRBS website and were analyzed using the Statistical Package for Social Sciences (SPSS) for complex samples. Preliminary analysis indicates that 27.1% of adolescents with a BMI in the underweight category perceived their body weight to be normal, while 13.2% of adolescents with a normal BMI perceived themselves as overweight. Data will be further evaluated to compare body weight estimation and weight management behavior by both grade and gender. This study is important because identifying that an overestimation of body weight in under or normal weight adolescents from high school is related to abnormal weight management could help identify at-risk adolescents and aid in early preventive efforts.

Introduction

- Weight perception, rather than measured weight, has been found to be associated with mental health indicators among teens
- The perception of being overweight is one reason that adolescents decide to lose weight, regardless if they are truly overweight
- There have been continual increases in eating and weight-related problems ranging from obesity to body dissatisfaction, even leading to harmful eating disorders and unhealthy weight control behaviors

Purpose of the Study

- To examine the prevalence of body weight overestimation in adolescents
- To determine if an overestimation of body weight in under or normal weight adolescents is related to unhealthy weight control strategies

Methods

- Data from the 2013 Youth Risk Behavior Surveillance System
 - Nationally representative sample distributed by the Centers for Disease Control and Prevention
 - Examines the main health risk behaviors among adolescents in the United States
 - The responses were 50% male and 50% female
- Sampling
 - The national YRBS uses a three-stage, cluster sample design to obtain a nationally representative sample of U.S. students in grades 9-12
 - Target population comprises all public and private school students grades 9-12 in all 50 states.
 - Designed to produce estimates that are accurate within +/- 5% at a 95% confidence level.
- BMI Data
 - Underweight = BMI < 5th percentile
 - Healthy or normal weight = 5th – 85th percentile
 - Overweight = BMI > 85th percentile
 - Obese = BMI > 95th percentile
- Data requested was obtained from the CDC and analyzed using the Statistical Package for the Social Sciences (SPSS) for complex samples
- Retrospective cross-sectional design

Results

Accuracy of Body Perception (n = 12,345)

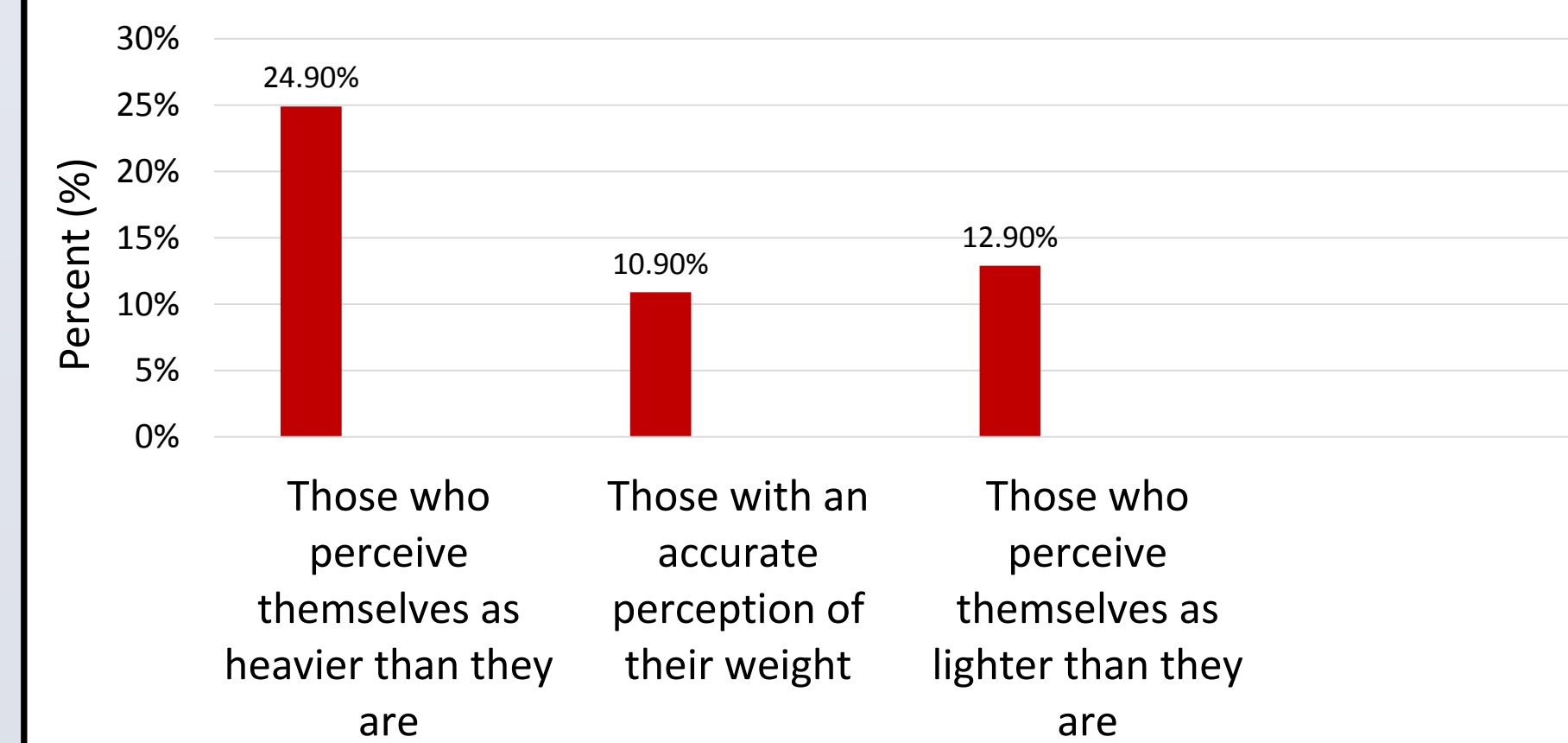
	Actual Weight (BMI)			
	Under-weight	Normal	Over-weight	Obese
Perception of Weight:				
Underweight				
Count	277	1394	47	50
Percent (%)	2.2%	11.2%	0.4%	0.4%
Normal Weight				
Count	104	5668	843	250
Percent (%)	0.8%	45.7%	6.8%	2.0%
Overweight				
Count	2	1085	1036	1077
Percent (%)	0.0%	8.8%	8.4%	8.7%
Obese				
Count	1	77	105	378
Percent (%)	0.0%	0.6%	0.8%	3.0%

Accurate Body Perception	59.3%
Perceives Themselves as Heavier Than They Are	11.1%
Perceives Themselves as Lighter Than They Are	29.5%

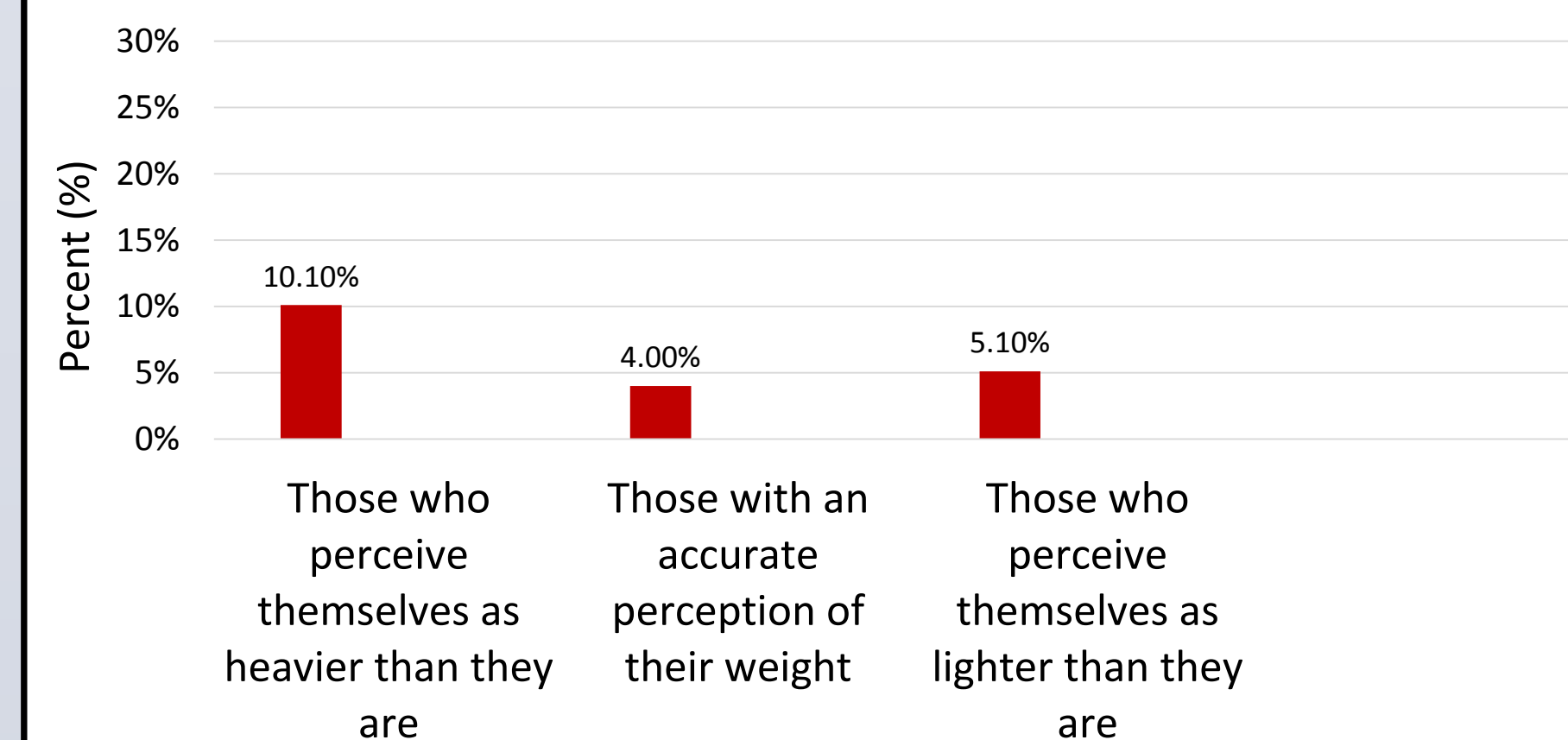
Accuracy of Body Perception By "What Are You Trying To Do To Lose Weight?" (n = 12,345)

	Lose Weight	Gain Weight	Stay the Same	Not Trying to Do Anything
Perceive Themselves as Lighter Than They Are (Under-Estimators)	45.2%	26.6%	14.4%	13.8%
Accurate Perception of Weight	41.2%	17.3%	21.5%	20.0%
Perceive Themselves as Heavier Than They Are (Over-Estimators)	82.6%	3.0%	5.0%	9.3%

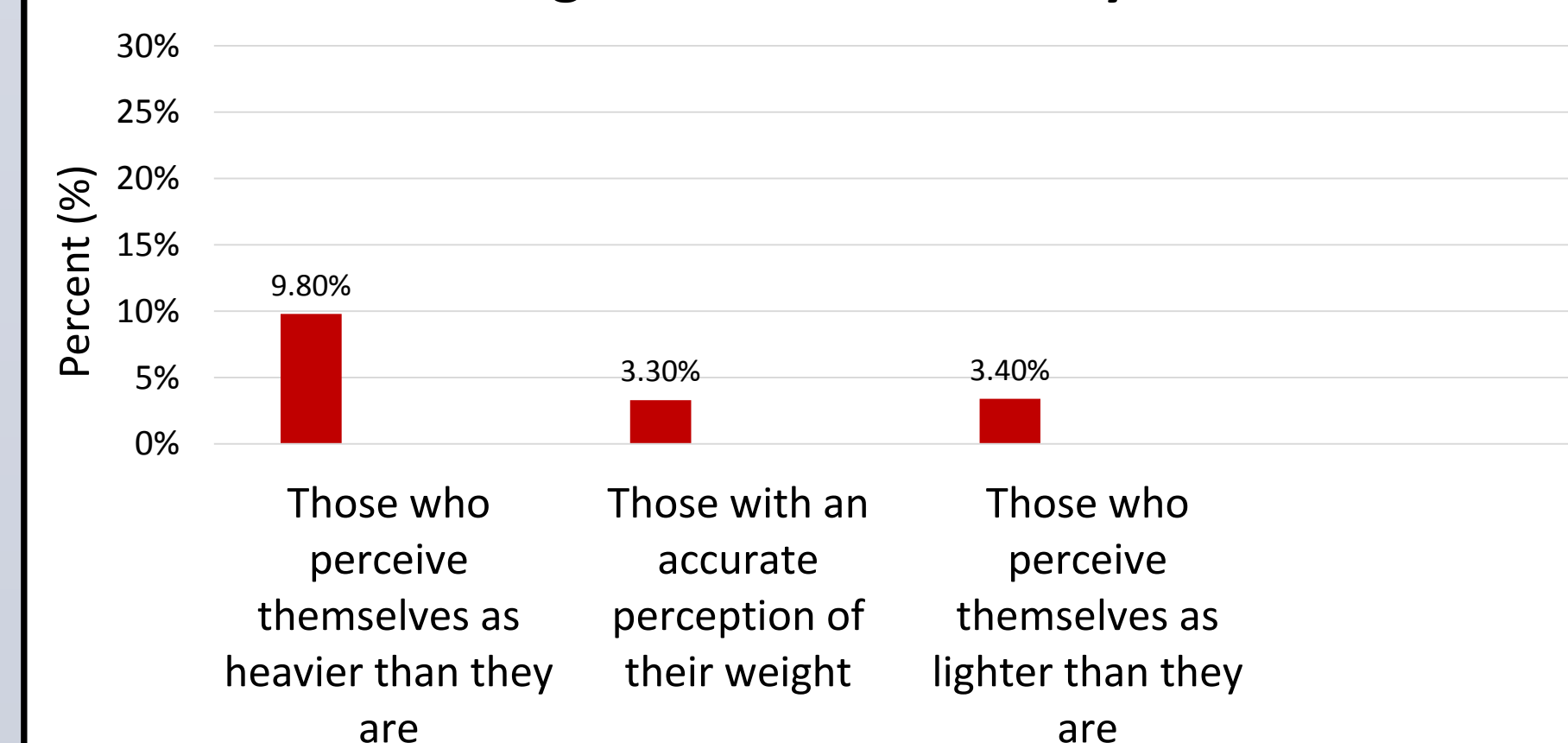
Responded Yes to "Did You Fast to Lose Weight in the Past 30 Days?"



Responded Yes to "Did You Take a Pill to Lose Weight in the Past 30 Days?"



Responded Yes to "Did You Vomit to Lose Weight in the Past 30 Days?"



Discussion and Conclusions

- Adolescents who think they are heavier than they actually are (over-estimators) are **2-3 times** more likely to engage in negative weight management behaviors
- We identified that an overestimation of body weight in under or normal weight adolescents in high school **is related** to abnormal weight management
- Fasting** was determined to be the most prevalent negative weight management strategy
- 1 in 10** high school adolescents have an unrealistic body image, seeing themselves as heavier than they are. Even more concerning, is that of these individuals **more than 80%** of them are trying to do something about it (lose weight) which could lead to dangerous habits.
- These findings are critical because negative weight management behavior strategies are a known precursor to disordered eating. Detecting this relationship can help identify at-risk adolescents and aid in early preventative efforts.

Limitations

- The calculated BMI's were based off of self-reported height and weight, leaving room for error
- There is still a stigma surrounding disordered eating which could result in these numbers being under-reported
- The term "fasting" was not defined, leaving it open for interpretation